

ART. XVII.—*The Geology of the Barwon about
Inverleigh.*

BY T. S. HALL, M.A., AND G. B. PRITCHARD.

(With Plate XXVI.).

[Read 12th November, 1903.]

Any references to the geology of the Barwon Valley between its junction with the Leigh and the Moorabool are but scanty. In 1889 we paid a brief visit to the junction of Native Hut Creek with the Barwon, and collected a few fossils, which were included in a Catalogue of Tertiary Fossils published by one of us in 1892 (1). A couple of years later the same author described *Pinna cordata* from near the same locality (2). In 1898 Messrs. Dennant and Mulder noted the occurrence of eocene clays at Inverleigh without, however, recording any fossils, and concluded that the deposit was continuous from that place northwards to the sections described by them about Shelford.

The general geological boundaries are shown on Everett's map, with perhaps as much exactness as the scale would allow, and are, as we understand from Mr. H. Herman, the result of a very hurried visit.

The township of Inverleigh is situated at the junction of the Leigh and the Barwon on an alluvial tongue in the broad valley cut by the two streams. To the west, south, and east the surface rocks are mainly basaltic, while to the north is a sandy plateau covered with the usual park-like growth of eucalyptus that this class of country generally supports in Southern Victoria. The surface of the lava plain drops rapidly from the northwards towards the foot of the Barrabool Hills, Elaine, twenty-two miles to the north, being 1300 feet above sea level, while the basalt escarpment west of Inverleigh is about 200 feet. From Inverleigh to Pollocksford the Barwon for the most part cuts its way through the lava to the underlying tertiaries, though about the junction of Native Hut and Bruce's Creeks it follows the

boundary between the basalt and the tertiary inliers to the north, which have never been covered by the flows. From Pollocksford to the junction of the Moorabool at Fyansford the river marks the geological boundary between basalt to the north, and the jurassic sandstones and other rocks, forming the Barrabool Hills, to the south.

Messrs. Dennant and Mulder have described the marine tertiary and associated beds of the Leigh in the paper quoted above, and have recognized about Shelford the occurrence of two sets of marine beds belonging to what they called eocene and miocene, and which we have suggested should be named Balcombian and Kalimnan. From a short distance above Shelford down to Inverleigh the left bank of the Leigh is bordered by a sandy plateau. The sands are in places cemented by iron oxide in their upper parts, and are succeeded in depth by slightly more argillaceous beds. On the opposite bank of the valley the upper beds have yielded Kalimnan fossils, and the lower ones Balcombian, and it seems probable that the same state of things should prevail on the left side of the valley, and that both sets of beds should be present, but the hill slopes are grass-covered for the most part and no Kalimnan fossils have been found as far as we are aware. The lower beds, where exposed, have yielded Balcombian forms: the most southerly, recorded by Messrs. Dennant and Mulder, being at "Farrell's" (Section 44, Parish of Carrah). Wherever the beds are exposed near river level, from here to Inverleigh, Balcombian fossils may be found, and were it not that Kalimnan species are yielded abundantly near Shelford, no hesitation would be felt in describing the whole inlier as Balcombian. The probability, however, is, as already indicated by Messrs. Dennant and Mulder, that there is a Kalimnan cover. On the eastern side of this area, where the Shelford road drops down into the Native Hut Creek Valley, the beds are very ferruginous, and we spent some hours searching in vain for fossils. Nor did we find any evidence one way or the other along the bush track from Teesdale to Shelford, while the deep road cutting, leading from the plateau to the Leigh Bridge higher up the valley than Inverleigh, was equally barren of result. We are, however, of the opinion, as already stated, that the superficial portion of the series should be regarded as Kalimnan, though fossil evidence is wanting.

The road from Shelford to Leigh Road (Bannockburn) traverses these sandy beds for the whole of its twelve miles of length, with the exception of a small patch of basalt at Teesdale, and a narrow flow, about a quarter of a mile wide, which passes down Stony Creek. To the southward this flow is continuous with that at the Inverleigh Racecourse, the low bluffs on the river bank east of Inverleigh, and so on across the Barwon south of this, till it merges in the wide basaltic area about the foot of Mount Pollock and the sandy plateau of Gnarwarre.

The sandy beds to the east of Stony Creek on the Teesdale-Bannockburn Road, are marked as younger tertiary on Everett's map; but there seems no good reason for the different colouration on the two sides of the Stony Creek coulée. This flow is only a very thin one where the Teesdale to Bannockburn Road crosses it, as evidenced by the fact that it usually supports a similar growth of trees to that which the sandy beds do, or, in other words, the roots pierce the basalt to reach the sands below. Besides this there are several bracken-covered patches of sand which rise slightly above the basalt which surrounds them. So far no fossil evidence of the Kalimnan age of the upper part of these beds has been found, though we have searched near Bannockburn and Murgheboluc. The underlying beds yield a Balcombian fauna at Murgheboluc and Native Hut Creek, as will be shown in the sequel; but we believe the superficial beds to belong to the younger series, though, it must be admitted, on very slight evidence.

The present paper deals more particularly with the sections of the Balcombian beds displayed along the course of the Barwon from Inverleigh to Pollocksford. These occur on the faces of the gorge cut by the stream, and are not indicated on Everett's map, with the exception of the one below Murgheboluc. Even had they been noticed the small scale of the map would have prevented their indication.

INVERLEIGH.

For about a mile and a half above the bridge on the main road the river flows close along the foot of the plateau to the north of the township, with the result that numerous small outcrops of

Balcombian beds occur close to water level. A couple of hundred yards or so above the bridge there is a good exposure along the river, which can only be worked when the water is about summer level. There is another exposure at about the same distance below the bridge. As in all the outcrops about here the beds are practically horizontal, we have not kept the fossils separate. The strata consist of light grey sandy clays, and the fossils are in a good state of preservation. Among the more interesting finds were several specimens of *Poroleda lanceolata*, hitherto known only from the Gellibrand and Grice's Creek.

From the bridge for about a mile to the south-east the Leigh and the Barwon, which unites with it, meander through sandy alluvial flats, and then plunge into a shallow gorge about forty feet deep, cut into basalt, which occupies the river bed. A succession of rapids follows for a mile and a quarter when another alluvial flat is met, where the river receives the Native Hut Creek coming down from the north.

NATIVE HUT CREEK.

There is a fair exposure at the junction of the two streams, and a much better one about a mile and a half up the creek. At this upper section the beds are again sandy, with sheets of sandy limestone a few feet in thickness interstratified, and becoming ferruginous as we ascend. There is a considerable amount of salt in the beds, and brackish springs or soakages occur at various points, and the fossils are apt to become destroyed by efflorescing salt, unless washed immediately after collection.

A fine tooth of *Carcharodon megalodon*, five and a quarter inches in height, was obtained here, as well as a large nautilus, eight inches in diameter, and *Cypraea gigas*. Fragments of large shells are not uncommon, but fossils are only sparingly scattered through the sandy matrix. *Pinna cordata*, Prit., came from the junction of Native Hut Creek and the Barwon.

After the confluence of the two streams the Barwon turns sharply to the south, and describes a U-shaped loop about three miles in length. There are a few exposures apparently of Balcombian beds beneath the basalt cover, but we saw no fossils. At the road marked between Allotments 20A and 20B,

Parish of Gnarwarre, the basalt comes down to river level, and about 200 yards below this columnar basalt occupies the stream bed. Near the western boundary of Allotment 21 a short gully comes in from the south, and has brought down a small amount of coarse quartz conglomerate, derived apparently from some beds underlying the basalt. Soon after this the river skirts high bank in Sections II.A and II.B of Murgheboluc, and good exposures are displayed.

MURGHEBOLUC II.B.

Close to the junction of Allotments II.A and II.B we find at river level five feet of grey clays passing up into fawn sandy clays, and then into sands. There are several concretionary limestone bands present, some of which are rich in foraminifera, and might almost be called *Operculina* limestone, so plentiful are examples of this genus. The cliff is about 70 or 80 feet high, and is capped by basalt. The base of the cliff is somewhat masked by fallen debris, but a few yards further on the river runs close past its foot, and an easily worked section is exposed.

The beds as a whole resemble the others described, being grey sandy clays, with well preserved fossils in its lower part, though they have disappeared higher up the bank. There is an area of about 200 acres on the right bank of the river, from which the basalt has been denuded, and the boundary between the sandy older tertiary and the alluvium cannot be clearly drawn.

From here to the Murgheboluc flat we noted only a couple of exposures; one at river level in Section III., A and B, of Murgheboluc, seemed fairly rich, and we saw *Cypraea eximia*, and a few other typical forms. The river now touches the southern border of what we may call the Bruce's Creek tertiary area, which extends from here northward to about Lethbridge, the probable age of the superficial beds of which we have previously alluded to. A large amount of denudation has taken place, and on the northern or left bank of the river there is nearly a square mile of alluvial flat intersected by a few deserted river channels, and there is a smaller similar area on the south side of the stream. The whole quadrangular area is hemmed by steep cliffs about 100 feet in height, the river entering and leaving by comparatively narrow gorges at the two southern angles.

BRUCE'S CREEK JUNCTION.

A good section is displayed on the river bank in Section IV. A, Murgheboluc. The composition of the beds, as before, is grey, sandy clays, and a fair number of fossils were obtained, including a tooth of *Cestracion*, n.sp., and, as is usual in sandy beds, the fossils have disappeared from the higher parts of the cliffs.

From here to Pollocksford, a little over two and a half miles in a straight line, the river gorge is narrow, and its sides are masked by basalt from the plateau above. Here and there indications of the underlying tertiaries are to be seen in places; but, even where sandy cliffs occur under the basalt, as in Section IV. C, which is inaccessible, or in Section V. B, no fossils were obtained. Just above Pollocksford an outcrop of yellow sandy clay was found, forty-five feet above the river level, and then, a hundred yards below this, columnar-basalt occupies the river bed for nearly half a mile.

Between Pollocksford and Fyansford the river skirts the jurassics, which rise to over 400 feet to the south, and is hemmed in on the north by basalt. We defer any discussion of this part of the country to a later paper.

THE AGE OF THE MARINE BEDS (Barwonian Series).

An examination of the lists of fossils given shows that the beds examined from Inverleigh to Murgheboluc are almost identical with those of Red Hill, near Shelford, and of Orphanage Hill, Fyansford. Lithologically the whole series, from Red Hill and thence down the Barwon through Inverleigh, Murgheboluc and so on to Fyansford (Orphanage Hill), are very similar, though at the latter place there is far less sand, and the beds are really grey marls.

In the paper in which we proposed the names Balcombian and Janjukian we indicated the existence of certain beds which undoubtedly belonged to the older series comprised under these two names, which are clearly distinct from the younger Kalimnan, but which from the smallness of the collections available, we did not care to refer definitely to either Balcombian or Janjukian. In other words, the palaeontological differences between Balcombian and Janjukian series, though of importance, are not

nearly so marked as between them and the Kalimnan. On these grounds we think it advisable that a name should be given which will comprise both Balcombian and Janjukian. The former series is extensively developed in the Barwon basin, and the latter at its typical exposure at Spring Creek, south of Geelong, is not far from the borders of the same basin, so that the name Barwonian is suggested.

No geographical name that can be proposed is of course free from objection on the grounds that other beds are present in the area taken as typical; but it seems advisable that a local name should be employed, and the present seems a satisfactory one.

THE BASALT PLAINS.

There are no points of eruption in the immediate neighbourhood which can be pointed to as the probable sources of the thin, but wide-reaching, lava flows of the plains. Mount Pollock, a few miles south of Inverleigh, is merely a lava-capped outlier, a fact which Everett's map seems to indicate, for it is not marked as a point of eruption. We hope at some future time to discuss the characters of the country about here which are not made clear by our preliminary examinations. The river course when crossing the lava-covered plains is usually trenched to a depth of about 100 feet about Murgheboluc, but about Native Hut Creek and on the Barwon above Inverleigh the depth is less. Owing to constant masking of the steep slopes by basaltic soil, the thickness of the flows is rarely determinable with exactness, but as shown by the frequent presence of basalt *in situ* in the river bed, and at others by the outcrop of sandy beds at a high level, the old surface was very uneven.

The boundaries of the basalt are roughly shown on Everett's map.

THE YOUNGER BEDS.

Apart from the alluvium of the present valleys there is a series of extensive sheets of sands and gravels which in many places overlie the basalt. The country between Winchelsea and Inverleigh is shown on Everett's map as covered by a uniform basalt sheet, whereas, between the outlier known as Mount

Pollock and the river Barwon on the west, the country is covered with quartz sand, which on some of the river cliffs is seen to be about thirty feet in thickness, reposing on basalt, into which the river has cut its way for another thirty feet. One travels for miles along the Winchelsea Road without seeing a stone wall, and as the plains are devoid of timber, stone would have been used did it outcrop. Following this sandy country to the northward, we find it on the left bank of the Barwon also, between Inverleigh and Native Hut Creek, extending from the river itself northwards beyond the Geelong Road. On the east of Native Hut Creek a strip about twenty feet in thickness and half a mile in length from north to south is crossed by the main road. Evidence of its former extension to the eastward is afforded by scattered quartz pebbles on the basalt plateau east of Murgheboluc. Here the material is evidently derived from the sandy tertiaries north of the Barwon, which were not covered by the flows of lava, and which in many places still rise above its level. In the neighbourhood of Inverleigh itself it is at times impossible to separate this deposit from the sandy alluvium of the river flats and the Balcombian beds, which are also sandy. We think it better to regard the ground on which Inverleigh is built as alluvium rather than as Balcombian, as some of the river cliff sections show very characteristic, thin, irregularly bedded structure quite distinct from the even bedding of the marine beds.

Some of the hillocks west of the township which gradually rise to the level of the basalt of the western plains are doubtless Balcombian, for it underlies the whole district between the ordovician on the north, and the jurassic on the south. The high level alluvium on the basalt points probably to a time when the drainage system was different from what it is now, and when the Barwon and the Leigh possibly found their way to the sea by passing along the south side of the Barrabools, the flow along the long reach of the Barwon south of Inverleigh, and reaching to near Winchelsea, being reversed.

LIST OF FOSSILS.

Name of Fossil.	Inverleigh.	Native Hut Creek.	Margheboluc.	Barwon R. Bruce's Creek Junction.
<i>Lamellibranchiata.</i>	1	2	3	4
<i>Ostrea lyotis</i> , Linnaeus - -	.	2	23	24
<i>Dimya dissimilis</i> , Tate - -	1	2	3	4
<i>Pecten murrayanus</i> , Tate - -	.	2	.	4
„ <i>foulcheri</i> , T. Woods - -	.	2	.	.
„ <i>eyrei</i> , Tate - -	1	.	.	4
„ <i>sturtianus</i> , Tate - -	.	2	3	4
„ <i>yahliensis</i> , T. Woods - -	.	.	.	4
<i>Amussium zitteli</i> , Hutton - -	1	2	.	4
<i>Hinnites corioensis</i> , McCoy - -	.	.	.	4
<i>Lima bassi</i> , T. Woods - -	1	.	3	4
„ <i>linguliformis</i> , Tate - -	.	.	.	4
<i>Limatula jeffreysiana</i> , Tate - -	1	.	3	4
<i>Limea transenna</i> , Tate - -	.	.	3	.
<i>Spondylus pseudoradula</i> , McCoy - -	1	2	3	4
<i>Meleagrina crassicaudia</i> , Tate - -	.	.	3	4
<i>Pinna cordata</i> , Pritchard - -	.	2	.	4
<i>Septifer fenestratus</i> , Tate - -	1	2	3	4
<i>Modiolaria balcombei</i> , Pritchard - -	1	.	.	.
<i>Nucula tenisoni</i> , Pritchard - -	1	2	3	4
„ <i>atkinsoni</i> , Johnston - -	1	2	.	4
<i>Leda vagans</i> , Tate - -	1	2	3	4
„ <i>huttoni</i> , T. Woods - -	.	2	.	.
„ <i>apiculata</i> , Tate - -	1	.	3	4
„ <i>praelonga</i> , Tate - -	1	.	.	.
<i>Sarepta obolella</i> , Tate - -	1	2	3	4
<i>Poroleda lanceolata</i> , Tate - -	1	.	.	4
<i>Limopsis belcheri</i> , Adams and Reeve - -	1	2	3	4
„ <i>morningtonensis</i> , Pritchard - -	1	.	.	.
<i>Glycimeris maccoyi</i> , Johnston - -	1	2	3	4
<i>Barbatia celleporacea</i> , Tate - -	1	2	.	4
„ <i>crustata</i> , Tate - -	1	2	3	.
<i>Plagiarca cainozoica</i> , Tate - -	1	2	3	4
<i>Cucullaea corioensis</i> , McCoy - -	1	2	.	4
<i>Trigonia tubulifera</i> , Tate - -	1	2	.	.
<i>Crassatellites communis</i> , Tate - -	1	2	3	4
„ <i>dennanti</i> , Tate - -	.	.	.	4
<i>Cardita polynema</i> , Tate - -	1	2	3	4
„ <i>delicatula</i> , Tate - -	1	2	3	4
„ <i>scabrosa</i> , Tate - -	.	2	.	4
<i>Chama lamellifera</i> , T. Woods - -	1	2	3	4
<i>Cardium cuculoides</i> , Tate - -	.	.	.	4
<i>Protocardium hemimeris</i> , Tate - -	1	2	3	4
„ <i>antisemigranulatum</i> , McCoy - -	.	2	.	.

LIST OF FOSSILS (continued).

Name of Fossil.	Inverleigh.	Native Hut Creek.	Murgheebelluc.	Barwon R. Bruce's Creek Junction.
	1	2	3	4
<i>Chione cainozoica</i> , T. Woods -	1	2	3	4
„ <i>dimorphophylla</i> , Tate -	.	.	.	4
<i>Meretrix eburnea</i> , Tate -	1	2	3	4
<i>Dosinia densilineata</i> , Pritchard -	1	.	.	.
<i>Tellina cainozoica</i> , T. Woods -	1	2	.	4
<i>Semele krauseana</i> , Tate -	1	.	3	4
<i>Myodora tenuilirata</i> , Tate -	1	2	3	.
<i>Capistocardia fragilis</i> , Tate -	1	.	.	.
<i>Corbula ephamilla</i> , Tate -	1	2	.	4
„ <i>pixidata</i> , Tate -	1	2	3	4
<i>Gastropoda.</i>				
<i>Murex lophoessus</i> , Tate -	1	2	3	4
„ <i>rhysus</i> , Tate -	1	2	.	.
„ <i>velificus</i> , Tate -	1	2	3	4
„ <i>eyrei</i> , Tate -	1	.	3	4
„ <i>basicinctus</i> , Tate -	.	.	3	4
<i>Typhis acanthopterus</i> , Tate -	1	2	3	4
„ <i>evaricosus</i> , Tate -	1	.	.	.
<i>Trophon asperulus</i> , Tate -	.	2	3	4
<i>Rapana aculeata</i> , Tate -	.	.	.	4
<i>Argobuccinum maccoyi</i> , Pritchard -	1	2	3	4
<i>Lotorium woodsi</i> , Tate -	1	2	3	4
„ <i>cyphus</i> , Tate -	1	.	.	4
„ <i>tortirostre</i> , Tate -	1	2	.	.
„ <i>pratti</i> , T. Woods -	.	2	.	.
„ <i>tumulosum</i> , Tate -	.	.	3	.
„ <i>protensum</i> , Tate -	.	.	.	4
„ <i>annectans</i> , Tate -	.	.	.	4
<i>Fusus senticosus</i> , Tate -	1	.	3	4
„ <i>simulans</i> , Tate -	.	2	.	.
<i>Latirofus hexagonalis</i> , Tate -	1	.	.	4
„ <i>exilis</i> , Tate -	1	2	.	4
<i>Clavella bulbodes</i> , Tate -	.	2	3	4
<i>Siphonalia longirostris</i> , Tate -	1	.	.	.
„ <i>tatei</i> , Cossmann -	1	.	.	.
<i>Solutofusus carinatus</i> , Pritchard -	.	2	.	.
<i>Fasciolaria cryptoploca</i> , Tate -	1	.	3	4
„ <i>cristata</i> , Tate -	.	2	.	4
<i>Latirus interlineatus</i> , Tate -	1	2	.	.
„ <i>succinctus</i> , T. Woods -	.	2	3	4
„ <i>subundulosus</i> , Tate -	.	2	3	4
<i>Euthria ino</i> , T. Woods -	1	2	3	4
<i>Phos tardicrescens</i> , Tate -	1	.	3	.
<i>Loxotaphrus variciferus</i> , Tate -	.	.	3	4

LIST OF FOSSILS (*continued*).

Name of Fossil.	Inverleigh.	Native Hut Creek.	Murgheebuc.	Barwon R. Bruce's Creek Junction.
	1	2	3	4
<i>Nassa tatei</i> , T. Woods - -	.	2	.	.
<i>Voluta hannafori</i> , McCoy - -	1	2	.	4
„ <i>antiscalaris</i> , McCoy - -	1	2	3	4
„ <i>strophodon</i> , McCoy - -	.	2	3	4
„ <i>ancilloides</i> , Tate - -	1	.	3	4
„ <i>maccoyi</i> , T. Woods - -	1	.	.	.
„ <i>costellifera</i> , Tate - -	1	.	.	4
„ <i>weldii</i> , T. Woods - -	1	.	.	.
<i>Volutoconus conoidea</i> , Tate - -	1	.	.	2 1
<i>Lyria harpularia</i> , Tate - -	.	2	.	4
<i>Mitra alokiza</i> , T. Woods - -	1	2	.	.
„ <i>leptalaea</i> , Tate - -	1	2	.	.
„ <i>atractoides</i> , Tate - -	1	2	.	4
„ <i>othone</i> , T. Woods - -	.	2	.	.
„ <i>ligata</i> , Tate - -	.	2	3	.
<i>Marginella propinqua</i> , Tate - -	1	2	3	4
„ <i>micula</i> , Tate - -	1	2	.	.
„ <i>inermis</i> , Tate - -	1	.	.	.
„ <i>wentworthi</i> , T. Woods - -	.	2	3	.
„ <i>semplicata</i> , Tate - -	.	2	.	.
<i>Ancilla semilaevis</i> , T. Woods - -	1	.	3	.
„ <i>psendaustralis</i> , Tate - -	.	.	.	4
<i>Harpa spirata</i> , Tate - -	1	.	.	.
<i>Columbella funiculata</i> , T. Woods - -	.	2	.	.
<i>Cancellaria varicifera</i> , T. Woods - -	1	2	3	4
„ <i>gradata</i> , Tate - -	.	2	.	.
<i>Terebra leptospira</i> , Tate - -	2 1	.	.	4
<i>Columbarium acanthostephes</i> , Tate - -	1	2	.	4
„ <i>craspedotum</i> , Tate - -	.	2	.	4
„ <i>foliaceum</i> , Tate - -	1	2	.	4
<i>Pleurotoma murndaliana</i> , T. Woods - -	1	2	3	4
„ <i>trilirata</i> , Harris - -	1	2	.	4
„ <i>septemlirata</i> , Harris - -	.	2	3	4
„ <i>optata</i> , Harris - -	1	2	.	.
„ <i>clarae</i> , T. Woods - -	.	2	3	.
<i>Bathytoma rhomboidalis</i> , T. Woods - -	1	2	3	4
<i>Drillia oblongula</i> , Harris - -	.	.	3	.
<i>Clathurella bidens</i> , T. Woods - -	1	.	.	4
<i>Buchozia hemiothone</i> , T. Woods - -	1	2	3	.
<i>Bela sculptilis</i> , Tate - -	1	.	.	4
<i>Conus dennanti</i> Tate - -	1	2	.	4
„ <i>heterospira</i> , Tate - -	.	2	.	4
„ <i>cuspidatus</i> , Tate - -	1	2	.	4
„ <i>ligatus</i> , Tate - -	.	2	.	.
„ <i>ptychodermis</i> , Tate - -	.	2	.	.

LIST OF FOSSILS (*continued*).

Name of Fossil.	Inverleigh.	Native Hut Creek.	Murghoboluc.	Barwon R. Bruce's Creek Junction.
	1	2	3	4
<i>Cypraca gigas</i> , McCoy -	1	2	.	4
„ <i>eximia</i> , Sowerby -	1	2	.	4
„ <i>contusa</i> , McCoy -	1	2	.	4
„ <i>leptorhyncha</i> , McCoy -	1	2	.	4
„ <i>brachypyga</i> , Tate -	1	.	.	.
„ <i>pyrulata</i> , Tate -	1	.	3	4
„ <i>sphaerodoma</i> var., Tate -	.	.	.	4
<i>Trivia avellanoides</i> , McCoy -	1	2	3	4
<i>Cassis exigua</i> , T. Woods -	1	.	.	.
<i>Cassidea sufflata</i> , T. Woods -	.	2	3	.
<i>Morio gradata</i> , Tate -	.	2	.	4
<i>Natica hamiltonensis</i> , T. Woods -	1	2	3	4
„ <i>polita</i> , T. Woods -	1	2	3	4
„ <i>subnoae</i> , Tate -	1	2	3	.
<i>Crepidula unguiformis</i> , Lamarck -	.	.	3	.
<i>Xenophora tatei</i> , Harris -	1	2	3	4
<i>Solarium acutum</i> , T. Woods -	.	2	.	.
<i>Scala pleiophylla</i> , Tate -	.	2	.	.
<i>Turritella platyspira</i> , Tate -	1	2	3	4
„ <i>acricula</i> , Tate -	1	2	3	4
„ <i>murrayana</i> , Tate -	.	.	.	4
„ <i>tristira</i> , Tate -	.	2	.	.
<i>Tenagodes oclusus</i> , T. Woods -	1	2	3	4
<i>Thylacodes conohelix</i> , T. Woods -	.	2	.	.
<i>Eulina danae</i> , T. Woods -	1	.	3	4
<i>Niso psila</i> , T. Woods -	.	2	3	.
<i>Mathilda transenna</i> , T. Woods -	1	2	.	.
<i>Cerithium apheles</i> , T. Woods -	1	2	3	4
<i>Newtoniella cribarioides</i> , T. Woods -	1	2	.	4
<i>Triforis wilkinsoni</i> , T. Woods -	1	2	.	.
„ <i>planata</i> , T. Woods -	.	2	.	4
„ <i>sulcata</i> , T. Woods -	.	2	.	.
<i>Collonia parvula</i> , T. Woods -	.	2	.	.
<i>Fissurellidæa malleata</i> , Tate -	.	2	3	4
<i>Submarginula oclusa</i> , Harris -	1	2	3	4
<i>Emarginula wannonensis</i> , Harris -	1	.	3	.
<i>Scaphander tenuis</i> , Harris -	1	.	.	4
<i>Bulinella exigua</i> , T. Woods -	1	.	.	.
„ <i>aratula</i> , Cossmann -	1	2	3	4
„ <i>cuneopsis</i> , Cossmann -	1	.	3	.
<i>Actæon distinguendus</i> , Cossmann -	.	2	.	.
<i>Umbraculum australe</i> , Harris -	.	.	3	.
<i>Dentalium aratum</i> , Tate -	1	2	.	.
„ <i>mantelli</i> , Zittel -	1	2	3	4
„ <i>subfissura</i> , Tate -	1	2	3	4
<i>Vaginella eligmostoma</i> , Tate -	.	2	.	.

LIST OF FOSSILS (*continued*).

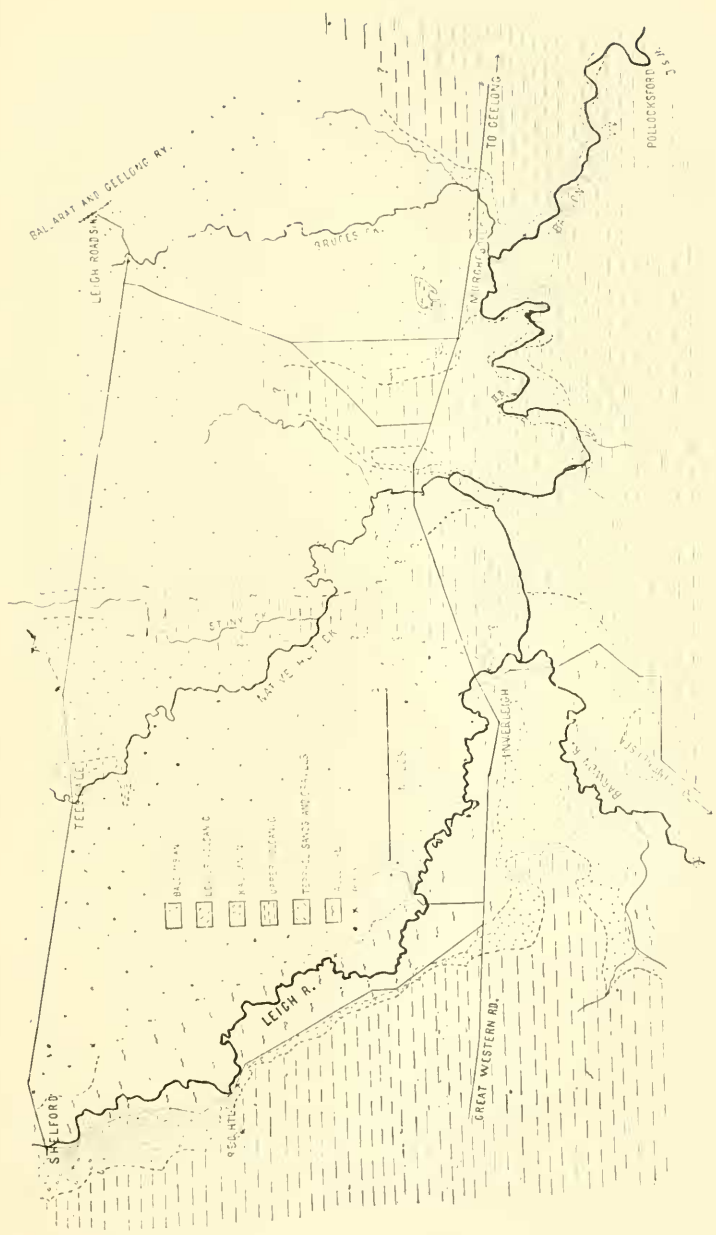
Name of Fossil.	Inverleigh.	Native Hut Creek.	Murgheboluc.	Barwon R. Bruce's Creek Junction.
<i>Cephalopoda.</i>	1	2	3	4
Nautilus, n. sp. - - - -	1	2	3	4
<i>Brachiopoda.</i>				
Magellania garibaldiana, Davidson -	1	2	3	4
„ corioensis, McCoy -	.	.	3	4
Terebratulina scoulari, Tate -	.	.	3	.
Terebratula tateana, Johnston -	.	2	3	4
<i>Zoantharia</i>				
Placotrochus deltoideus, Duncan -	1	2	3	4
„ elongatus, Duncan -	1	2	3	4
Flabellum victorise, Duncan -	1	2	3	4
„ gambierense, Duncan -	1	2	3	4
Balanophyllia australiensis, Duncan	1	.	3	.
Bathyactis lens, Duncan -	1	2	.	4
Ceratotrochus halli, Dennant -	1	.	.	.
Notophyllia gracilis, Dennant -	1	.	.	.
Conosmilia anomala, Duncan -	1	.	.	.
„ striata, Dennant -	1	.	.	.
<i>Pisces</i>				
Carcharodon megalodon, Agassiz -	.	2	.	.
Cestracion, n. sp. - - -	.	.	.	4

SUMMARY.

Pisces - - - - -	2
Cephalopoda - - - -	1
Gastropoda - - - -	124
Lamellibranchiata - - -	53
Brachiopoda - - - -	4
Zoantharia - - - -	10

194 species.

Inverleigh - - - - -	125 species.
Native Hut Creek - - - -	127 „
Murgheboluc - - - - -	89 „
Barwon River, Bruce's Creek Junction -	122 „



Geological Map of the Inverleigh District.